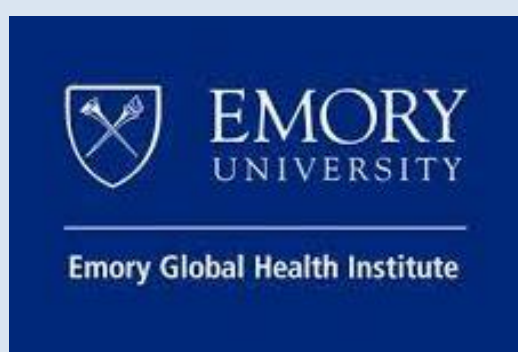


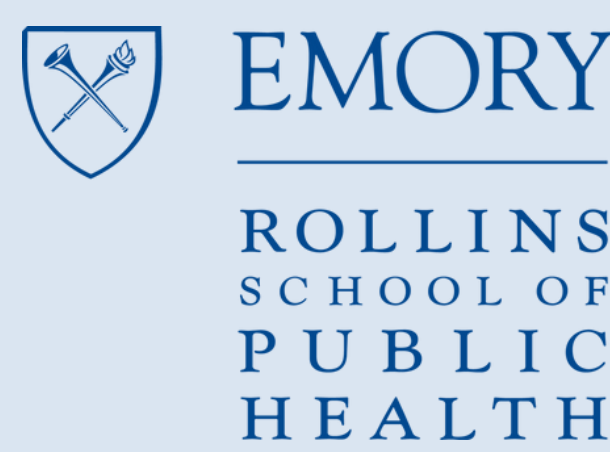


Vascular Anomalies Care at a Tertiary Care Hospital in Tanzania: A Quality Improvement Project

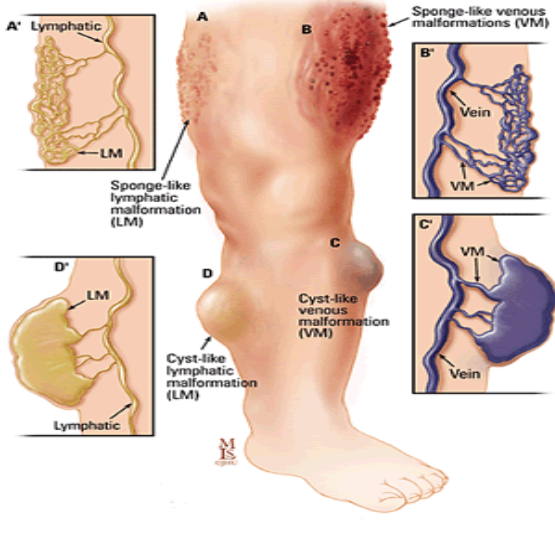
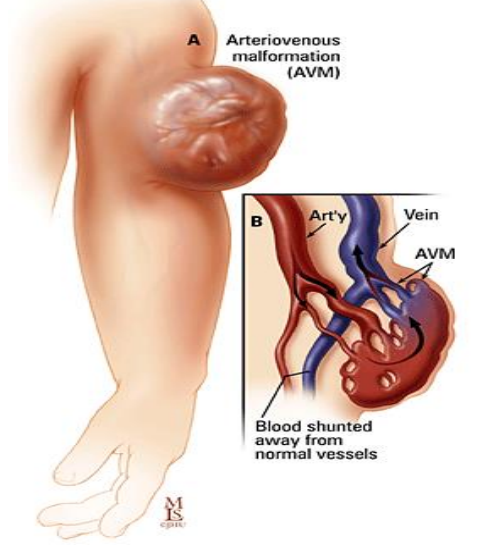


Turkan Banu Karatas, BA¹; Anusha Kothari²; Balowa Musa, MD³; Mwivano Shemwetta, MD³; Azza Naif, MD³; Erick Mbuguje, MD³; Paul E. George, MD^{1, 4, 5}; Jay Shah, MD^{1, 5}

¹Emory University School of Medicine, Atlanta, GA; ²Emory University, Atlanta, GA; ³Muhimbili National Hospital, Dar Es Salaam, Tanzania; ⁴Emory University Rollins School of Public Health, Atlanta, GA; ⁵Children's Healthcare of Atlanta, Atlanta, GA



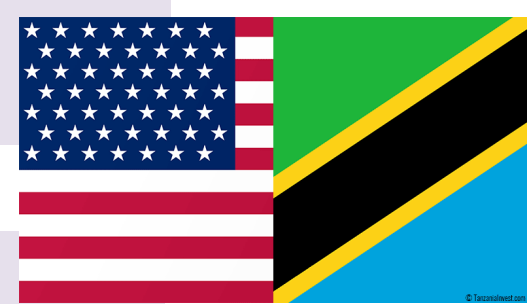
Background

- Vascular anomalies (VA)** refer to abnormalities of the vascular system (capillaries, lymphatics, veins and arteries) and are congenital but become apparent at different ages
 - VAs (vascular malformations and tumors), can range from simple birthmarks to life-threatening entities.¹
- 
- Figure 1.** Arteriovenous malformation, one of the many types of vascular anomalies.⁵
- Figure 2.** Different types of venous and lymphatic malformations in the leg, represented by a range of physical manifestations.⁵
- Although there is not yet a comprehensive prevalence data, VAs are prevalent in low- and middle- income countries (LMIC).²
 - Treatment options include surgery, interventional radiology, and/or medical management.
 - Given the complex nature of VA management, **Vascular Anomalies Multidisciplinary Clinics (VAMCs)** improve patient outcomes by allowing providers to collaborate on care and streamline patient experience.³
 - According to the International Society for the Study of Vascular Anomalies (ISSVA), only 8 of the 99 VAMCs are based in low- and middle- income countries.⁴

Materials and Methods

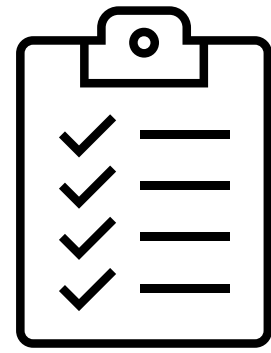
1. Overview

- A needs assessment tool was developed in an iterative process, involving feedback from providers in both the United States and Tanzania.



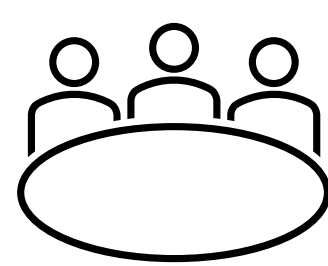
2. Interviews – United States

- 6 providers from the Children's Healthcare of Atlanta Vascular Anomalies Clinic were interviewed from ENT, nursing, genetics, general and plastic surgery, IR, and pediatric hematology/oncology specialties.



3. Consolidated Framework for Intervention Research (CFIR)

- The interview tool was adapted from the Consolidated Framework for Intervention Research, which contains five domains: intervention characteristics, outer setting, inner setting, characteristics of individuals, and implementation process.

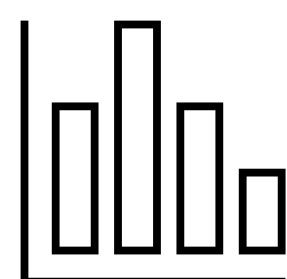


4. Interviews and Surveys - Tanzania

- 11 providers at Muhimbili National Hospital (MNH) in Dar Es Salaam, Tanzania were interviewed from specialties including dermatology, IR, pediatrics, general surgery, plastic surgery, ENT, pediatric hematology/oncology, and OMFS.

5. Analysis

- Qualitative Analysis: The interviews were transcribed and then subjected to thematic analysis.



Provider Perspectives

Theme I: *Need for Multidisciplinary Approach*

- Category I: Attitude toward a multidisciplinary approach:** There is consensus among providers that a multidisciplinary approach is the optimal way to manage VA cases, optimizing patient diagnosis and treatment.
- Category II: Camp vs Clinic:** The current camp fills the gap of existing VA cases, however, lacks the multidisciplinary approach. Discussions around the need or feasibility of a long-term clinic vs. periodic camps provide a unique perspective for VA treatment in the context of MNH.
- Category III: Need for ongoing training, skills improvement:** There is need for further provider education on diagnosis and management, especially skills training for complicated cases.
- Category IV: Other successful models:** Previously established multidisciplinary models such as tumor boards, cleft lip clinic, breast cancer clinic provide examples for the multidisciplinary VA clinic

Theme II: *Barriers for establishing a multidisciplinary clinic*

- Category I: Limitations in time, number of providers, clinic schedule:** The limited number of specialists, limitations on time and other busy clinic duties have been determined as the main barriers for a multidisciplinary clinic from the providers' side.
- Category II: Other general barriers:** Other barriers can be summarized as the lack of clear roles and ownership of patients, resistance to change, structural barriers.
- Category III: Need for further research and funding:** To understand the context of VAs in Tanzania and justify the need to establish a clinic to other stakeholders such as the hospital administration, a need for further research is needed.

Theme III: *Barriers for patients*

- Category I: Financial and Logistical** - Treatment and hospital costs have been identified as the main barrier for patients. Moreover, patients travel from other regions of the country, leading to transportation and accommodation costs, time away from school or work, other expenses such as food or in-town transportation.
- Category II: Medical system** - Current system leads to multiple referrals across different clinics or hospitals, and across different specialties until reaching the correct diagnosis and treatment. This leads to delays in treatment, further financial constraints to patients, psychosocial impacts on patients such as frustration.
- Category III: Cultural aspects** - The main cultural limitation for patients and caregivers is the lack of awareness and education regarding VAs. Other cultural factors include stigma against disfiguring lesions, cultural beliefs and taboos, use of traditional treatment methods.

Theme IV: *Clinical Management of Vascular Anomalies*

- Category I: Observation & Medical management** - For minimal lesions, observation or medical treatment with propranolol are preferred. The use of propranolol has been very common in the past, lately, being replaced by more procedural approaches, due to the side effects of high propranolol doses and patient preference to methods that will yield quicker results.
- Category II: Procedures & Surgery** - Surgery has been commonly used for the treatment of VA. With the establishment of the IR department in 2019, providers have been increasingly referring to IR for sclerotherapy or embolization. However, the treatments and referrals are not uniform, leading to variability in patient outcomes.

Objectives

- To assess the attitudes, knowledge, and awareness of clinicians at Muhimbili National Hospital (MNH) in Dar Es Salaam regarding the establishment of a VAMC.
- To understand the socioeconomic and psychosocial barriers faced by patients and caregivers.

Conclusion

- Our findings underscore significant socioeconomic and psychosocial barriers for patients and their families.
- There is a need and potential for a VAMC at MNH. Ongoing dialogue between providers and addressing barriers will help establish a VAMC in Tanzania.
- A more coordinated approach at MNH to address the complex needs of VA patients in Tanzania - reducing logistical and cost burdens and emphasizing patient education and stigma reduction - could enhance patient care, reduce the burden on families and improve long-term outcomes in this region.

Acknowledgements

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